Complete Summary

GUIDELINE TITLE

Lung cancer. Invasive staging: the guidelines.

BIBLIOGRAPHIC SOURCE(S)

Detterbeck FC, DeCamp MM Jr, Kohman LJ, Silvestri GA. Lung cancer. Invasive staging: the guidelines. Chest 2003 Jan;123(1 Suppl):167S-75S. [29 references] PubMed

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Non-small cell lung cancer

GUIDELINE CATEGORY

Diagnosis

CLINICAL SPECIALTY

Oncology
Pulmonary Medicine
Radiology
Thoracic Surgery

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide clinically relevant, evidence-based guidelines for the test performance characteristics of transbronchial needle aspiration (TBNA), transthoracic needle aspiration (TTNA), endoscopic ultrasound-guided needle aspiration (EUS-NA), and mediastinoscopy in staging non-small cell lung cancer (NSCLC)

TARGET POPULATION

Patients with known or suspected lung cancer

INTERVENTIONS AND PRACTICES CONSIDERED

Mediastinal staging of non-small cell lung cancer through use of the following invasive procedures:

1. Transthoracic needle aspiration (TTNA)
2. Endoscopic ultrasound-guided needle aspiration (EUS-NA)
3. Transbronchial needle aspiration (alternative)
4. Mediastinoscopy (standard cervical mediastinoscopy, extended cervical mediastinoscopy)
5. Anterior mediastinotomy (Chamberlain procedure)
6. Thoracoscopy

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of invasive staging tests
- Negative predictive value (NPV) of invasive staging tests
- Positive predictive value (PPV) of invasive staging tests

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Overview

As a first step in identifying the evidence for each topic, the guideline developers sought existing evidence syntheses including guidelines, systematic reviews, and meta-analyses. They searched computerized bibliographic databases including MEDLINE, Cancerlit, CINAHL and HealthStar, the Cochrane Collaboration Database of Abstracts of Reviews of Effectiveness, the National Guideline Clearinghouse, and the National Cancer Institute Physician Data Query database. Computerized searches through July 2001 used the MeSH terms lung neoplasms (exploded) and bronchial neoplasms or text searches for lung cancer combined with review articles, practice guidelines, guidelines, and meta-analyses. They also searched and included studies from the reference lists of review articles, and queried

experts in the field. An international search was conducted of Web sites of provider organizations that were likely to have developed guidelines. Abstracts of candidate English language articles were reviewed by two physicians (one with methodological expertise and one with content area expertise) and a subset was selected for review in full text. Full-text articles were reviewed again by two physicians to determine whether they were original publications of a synthesis and were pertinent to at least one of the topics of the guideline. Articles described as practice guidelines, systematic reviews, or meta-analyses were included, as were review articles that included a "Methods" section. Included articles were classified according to topic.

Strategy specific to invasive staging procedures

For the topic, the guideline developers formulated two key questions that were to be answered by a comprehensive critical review of the published evidence:

(1) What are the sensitivities and specificities of transbronchial needle aspiration (TBNA), transthoracic needle aspiration (TTNA), endoscopic ultrasound-guided needle aspiration (EUS-NA), mediastinoscopy, and mediastinotomy in patients with lung cancer for detecting malignancy in mediastinal lymph nodes?

(2) How accurate are negative lymph node biopsies obtained by TBNA, TTNA, EUS-NA, mediastinoscopy, and mediastinotomy in predicting the absence of nodal metastases in patients with lung cancer?

To address these questions, Duke University, supported by a contract from the American College of Chest Physicians, conducted a computerized search of the MEDLINE bibliographic database (January 1991 to July 2001), HealthStar, and the Cochrane Library. Key words used for the search included lung neoplasm, bronchial neoplasm, mediastinoscopy, neoplasm staging, neoplasm metastasis, lymphatic metastasis, biopsy, needle biopsy, CT, mediastinum radiography, emission-CT, and sensitivity and specificity. In addition, they searched the reference lists of included studies, selected textbooks, practice guidelines, systematic reviews, and meta-analyses in order to ensure that all relevant studies were identified. Only articles published in English were considered.

In addition, pertinent studies published between 1980 and 1991 were identified through a previously published search that included MEDLINE, a review of the table of contents of 10 medical journals (Annals of Thoracic Surgery; Cancer; CHEST; International Journal of Radiation Oncology, Biology, and Physics; Journal of Clinical Oncology; Journal of Thoracic and Cardiovascular Surgery; Lung Cancer; Radiology; Seminars in Oncology; and Thorax), and a review of the reference lists of other articles. The 10 journals were chosen because they contain approximately 75% of lung cancer research articles. Studies from this period were excluded if they involved patients who were subsequently included in a larger group described in a more recent publication.

Selection Criteria

Titles and abstracts, and the full text of all articles passing the title-and-abstract screen, were evaluated independently by at least two of the authors for inclusion or exclusion based on five criteria: (1) publication in a peer-reviewed journal; (2)

study size of > 20 patients (except for studies involving mediastinoscopy, which required a study size of > 50 patients); (3) patient group not included in subsequent update of the study; (4) confirmation of mediastinal nodal biopsy results by histology at the time of resection, or by long-term clinical follow-up (≥ 1 year) if the patient did not go on to resection; and (5) availability of original data so that sensitivities, specificities, and positive and negative predictive values (NPVs) could be independently calculated. Only articles meeting all five of these criteria were included for further analysis.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The USPSTF scheme offers general guidelines to assign one of the following grades of evidence: good, fair, or poor. In general, good evidence included prospective, controlled, randomized clinical trials, and poor evidence included case series and clinical experience. Trials with fair quality of evidence, for instance, historically controlled trials or retrospective analyses, were somewhere in between. In addition to the strength of the study design, however, study quality also was considered. The United States Preventive Services Task Force approach considers well-recognized criteria in rating the quality of individual studies for a variety of different types of study design (e.g., diagnostic accuracy studies and case-control studies). The thresholds for distinguishing good versus fair and fair versus poor evidence are not explicit but are left to the judgment of panelists, reviewers, and members of the executive committee.

Assessment of the Scope and Quality of Clinical Practice Guidelines

Clinical practice guidelines identified from the systematic search were evaluated by at least four reviewers using the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument.

METHODS USED TO ANALYZE THE EVIDENCE

Meta-Analysis
Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Data Abstraction

Data were abstracted and tabulated separately by type of invasive procedure (transbronchial needle aspiration [TBNA], transthoracic needle aspiration [TTNA], endoscopic ultrasound-guided needle aspiration [EUS-NA], mediastinoscopy, or mediastinotomy) and were abstracted and analyzed three ways. First, abstracted data were analyzed for all patients undergoing invasive techniques, regardless of the indication. In this case, a definitive diagnosis of any malignancy was considered positive, and a definitive benign diagnosis was considered negative. In the second case, the abstraction was performed for patients suspected of having lung cancer. In this case, a definitive diagnosis of any lung cancer (e.g., non-small cell lung cancer [NSCLC], small cell lung cancer [SCLC]) was considered positive. Patients suspected of a diagnosis other than lung cancer were excluded, where possible. Patients with both NSCLC and SCLC were included in the analyses. Finally, data abstraction was performed for patients with a confirmed diagnosis of NSCLC. In this case, a definitive diagnosis of NSCLC was considered positive, and any other biopsy result was negative.

Either tissue histologic confirmation or long-term clinical outcome was utilized as the reference or "gold standard."

Patients in whom an adequate biopsy specimen was not obtained were included in the calculations of sensitivity and specificity, however, patients for whom a sample was not obtained were excluded when calculating the negative predictive value (NPV).

Statistical Analysis

Summary sensitivity and specificity, and their respective confidence intervals (CIs), were calculated using the Meta-Test (New England Medical Center; Boston, MA) statistical software for meta-analysis of diagnosis tests. Summary positive predictive value (PPV), negative predictive value, and prevalence were calculated based on the total number of true-positive, false-negative, false-positive, and true-negative results summed across studies; however, studies in which all subjects had mediastinal disease were excluded from these calculations.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Each writing committee received a comprehensive list of existing systematic reviews and meta-analyses as well as guidelines published by other groups. In addition, for five of the key topics (prevention, screening, diagnosis, and staging [invasive and noninvasive], new systematic reviews were undertaken (see "Description of Methods Used to Collect the Evidence" and "Description of Methods Used to Analyze the Evidence" fields). For all other topics, writing committees were responsible for identifying and interpreting studies that were not otherwise covered in existing syntheses or guidelines.

The guidelines developed by the writing committee were distributed to the entire expert panel, and comments were solicited in advance of a meeting. During the meeting, proposed recommendations were reviewed, discussed, and voted on by the entire panel. Approval required consensus, which was defined as an overwhelming majority approval. Differences of opinion were accommodated by revising the proposed recommendation, the rationale, or the grade until consensus could be reached. The evidence supporting each recommendation was summarized, and recommendations were graded as described. The assessments of level of evidence, net benefit, and grade of recommendation were reviewed by the executive committee.

Values

The panel considered data on functional status, quality and length of life, tolerability of treatment, and relief of symptoms in formulating guideline recommendations. Cost was not explicitly considered in the guideline development process. Data on these outcomes were informally weighted, without the use of explicit decision analysis or other modeling. The values placed on types of outcomes varied with clinical scenarios. For example, in some situations they considered life expectancy, such as the effects of early detection. In other situations they weighed quality of life more heavily, such as in palliative care and in interpreting small increases in life expectancy with chemotherapy for stage IV disease.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The guideline developer's grading scheme is a modification of the United States Preventive Services Task Force (USPSTF) grades to allow recommendations for a service when (1) evidence is poor, (2) the assessment of the net benefit is moderate to high, and (3) there is consensus among the expert panel to recommend it. This change was necessary because, unlike preventive services (i.e., the routine offering of tests or treatments to well people) in which the burden of proof is high, clinical decisions about the treatment of patients with lung cancer often must be based on an interpretation of the available evidence, even if it is of poor quality. This adaptation distinguished between interventions with poor evidence for which there is consensus (grade C) and interventions with poor evidence for which there is not consensus (grade I).

Grades of Recommendations and Estimates of Net Benefit

The grade of the strength of recommendations is based on both the quality of the evidence and the net benefit of the service (i.e., test, procedure, etc).

Grade A The panel strongly recommends that clinicians routinely provide [the service] to eligible patients. An "A" recommendation indicates good evidence that [the service] improves important health outcomes and that benefits substantially outweigh harms.

Grade B The panel recommends that clinicians routinely provide [the service] to eligible patients. A "B" recommendation indicates at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

Grade C The panel recommends that clinicians routinely provide [the service] to eligible patients. A "C" recommendation indicates that there was consensus among the panel to recommend [the service] but that the evidence that [the service] is effective is lacking, of poor quality, or conflicting, or the balance of benefits and harms cannot be reliably determined from available evidence.

Grade D The panel recommends against clinicians routinely providing [the service]. A "D" recommendation indicates at least fair evidence that [the service] is ineffective or that harm outweighs benefit.

Grade I The panel concludes that the evidence is insufficient to recommend for or against [the service]. An "I" recommendation indicates that evidence that [the service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined, and that the panel lacked a consensus to recommend it.

Net Benefit

The levels of net benefit are based on clinical assessment. Estimated net benefit may be downgraded based on uncertainty in estimates of benefits and harms.

Substantial Benefit: Benefit greatly outweighs harm

Moderate Benefit: Benefit outweighs harm

Small/weak Benefit: Benefit outweighs harm to a minimally clinically important degree

None/negative Benefit: Harms equal or outweigh benefit, less than clinically important

COST ANALYSIS

A formal cost analysis was not performed and published meta-analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

After extensive review within the expert panel and executive committee, the guidelines were reviewed and approved by the American College of Chest Physicians (ACCP) Health and Science Policy Committee and then by the American College of Chest Physicians Board of Regents.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Each recommendation is rated based on the levels of evidence (good, fair, poor), net benefit (substantial, moderate, small/weak, none/negative), and the grades of the recommendations (A, B, C, D, I). Definitions are presented at the end of the "Major Recommendations" field.

1. In patients who have extensive mediastinal infiltration with tumor (T4 involvement or involvement to the point of not being able to see discrete lymph nodes), the primary goal of an invasive procedure is to provide confirmation of the diagnosis. (The radiographic staging of mediastinal node involvement is compelling.) For these patients, transthoracic needle aspiration (TTNA) and endoscopic ultrasound-guided needle aspiration (EUS-NA) are procedures of choice based on high sensitivity (approximately 90%) and low morbidity (outpatient procedure). Level of evidence, fair; benefit, moderate; grade of recommendation, B

   For these patients, transbronchial needle aspiration (TBNA) is an alternative with appropriately located mediastinal involvement, but in general has lower sensitivity (approximately 75%) and occasional false-positive (FP) results. Level of evidence, fair; benefit, moderate; grade of recommendation, B

   For these patients, mediastinoscopy is least useful because of higher morbidity than EUS-NA, TTNA, and TBNA (although it is also an outpatient procedure). Level of evidence, fair; benefit, moderate; grade of recommendation, B

2. In patients suspected of having non-small cell lung cancer (NSCLC), who have no evidence of distant metastases, and who have enlarged, discrete mediastinal nodes by computed tomography (CT) (because of a high FP rate of CT), mediastinoscopy is the invasive procedure of choice to rule in mediastinal node involvement. This recommendation is based on the ability of mediastinoscopy to stage most of the commonly involved mediastinal node stations with a presumed low FP rate, a low false-negative (FN) rate (approximately 10%) and low morbidity (2%; outpatient procedure). Level of evidence, fair; benefit, substantial; grade of recommendation, B

   For these patients, TBNA, TTNA, and EUS-NA are alternatives to mediastinoscopy, but result in less thorough mediastinal staging because of difficulty in assessing as many node stations and because of a higher FN rate. Level of evidence, fair; benefit, moderate; grade of recommendation, B

   For the subset of these patients with left upper lobe (LUL) cancer, the Chamberlain procedure, extended cervical mediastinoscopy, EUS-NA, or thoracoscopy to evaluate the aortopulmonary window (APW) nodes should also be performed if other mediastinal node stations are found to be uninvolved. Level of evidence, fair; benefit, moderate; grade of recommendation, B

3. In patients suspected of having non-small cell lung cancer, who have no evidence of distant metastases, and who have normal mediastinal nodes by CT, but in whom invasive staging of the mediastinum is recommended

(because of a high FN rate of CT), mediastinoscopy is the invasive procedure of choice to rule out mediastinal node involvement. This recommendation is based on the ability of mediastinoscopy to stage most of the commonly involved mediastinal node stations with a low FN rate (approximately 10%) and low morbidity (2%; outpatient procedure). Level of evidence, fair; benefit, substantial; grade of recommendation, B

For these patients, TBNA, TTNA, and EUS-NA are not recommended because of a high FN rate. Level of evidence, fair; benefit, none/negative; grade of recommendation, D

For the subset of these patients who have a left upper lobe cancer, the Chamberlain procedure, extended cervical mediastinoscopy, or thoracoscopy should be additionally performed to evaluate the aortopulmonary window nodes. Level of evidence, fair; benefit, moderate; grade of recommendation, B

4. In patients with a positron-emission tomography (PET) scan that is positive in the mediastinum, confirmation should be obtained by an invasive test that allows sampling of the PET-positive nodes with a high sensitivity and a low FN rate. In general, mediastinoscopy is likely to be the best test. Level of evidence, fair; benefit, moderate; grade of recommendation, B
5. In patients with a PET scan finding that is negative in the mediastinum, in whom confirmation of the absence of mediastinal involvement is deemed desirable, mediastinoscopy is generally the best test because of a low FN rate. Level of evidence, poor; benefit, moderate; grade of recommendation, C

Levels of Evidence

In general, good evidence included prospective, controlled, randomized clinical trials, and poor evidence included case series and clinical experience. Trials with fair quality of evidence, for instance, historically controlled trials or retrospective analyses, were somewhere in between.

Grades of Recommendations and Estimates of Net Benefit

The grade of the strength of recommendations is based on both the quality of the evidence and the net benefit of the service (i.e., test, procedure, etc).

Grade A The panel strongly recommends that clinicians routinely provide [the service] to eligible patients. An "A" recommendation indicates good evidence that [the service] improves important health outcomes and that benefits substantially outweigh harms.

Grade B The panel recommends that clinicians routinely provide [the service] to eligible patients. A "B" recommendation indicates at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

Grade C The panel recommends that clinicians routinely provide [the service] to eligible patients. A "C" recommendation indicates that there was consensus among the panel to recommend [the service] but that the evidence that [the service] is effective is lacking, of poor quality, or conflicting, or the balance of benefits and harms cannot be reliably determined from available evidence.

Grade D The panel recommends against clinicians routinely providing [the service]. A "D" recommendation indicates at least fair evidence that [the service] is ineffective or that harm outweighs benefit.

Grade I The panel concludes that the evidence is insufficient to recommend for or against [the service]. An "I" recommendation indicates that evidence that [the service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined, and that the panel lacked a consensus to recommend it.

Net Benefit

The levels of net benefit are based on clinical assessment. Estimated net benefit may be downgraded based on uncertainty in estimates of benefits and harms.

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Moderate Benefit: Benefit outweighs harm

Small/weak Benefit: Benefit outweighs harm to a minimally clinically important degree

None/negative Benefit: Harms equal or outweigh benefit, less than clinically important.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Invasive techniques, unlike noninvasive techniques, provide definitive tissue diagnosis of tissue samples to confirm the cell type and diagnosis of metastatic disease.

POTENTIAL HARMS

Complications of invasive staging procedures:

- The main complications of transbronchial needle aspiration (TBNA) include those inherent to bronchoscopy, such as laryngospasm, and those specific to the biopsy, such as endobronchial bleeding.
- The main complications of transthoracic needle aspiration (TTNA) are pneumothorax and intrathoracic bleeding.
- Standard cervical mediastinoscopy requires general anesthesia and carries risks of bleeding and left laryngeal nerve injury.
- Extended cervical mediastinoscopy and anterior mediastinotomy are both associated with a risk of bleeding. Extended cervical mediastinoscopy has an additional risk of embolic stroke, while anterior mediastinotomy often results in violation of the pleura or injury to the internal mammary artery.

In addition, all staging procedures carry the risk of false-negative and false-positive results.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

1. The American College of Chest Physicians (ACCP) is developing a set of PowerPoint slide presentations for physicians to download and use for physician and allied health practitioners education programs.
2. The ACCP is developing a Quick Reference Guide (QRG) in print and PDA formats for easy reference.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Detterbeck FC, DeCamp MM Jr, Kohman LJ, Silvestri GA. Lung cancer. Invasive staging: the guidelines. Chest 2003 Jan;123(1 Suppl):167S-75S. [29 references] PubMed

DATE RELEASED

2003 Jan

GUIDELINE DEVELOPER(S)

American College of Chest Physicians - Medical Specialty Society

GUIDELINE DEVELOPER COMMENT

The guideline development panel was composed of members and nonmembers of the American College of Chest Physicians (ACCP) who were known to have expertise in various areas of lung cancer management and care, representing multiple specialties from the following 13 national and international medical associations:

- Alliance for Lung Cancer Advocacy, Support, and Education (a patient support group)
- American Association for Bronchology
- American Cancer Society
- American College of Physicians
- American College of Surgeons Oncology Group
- American Society of Clinical Oncology
- American Society for Therapeutic Radiology and Oncology
- American Thoracic Society
- Association of Community Cancer Centers
- Canadian Thoracic Society
- National Comprehensive Cancer Network
- Oncology Nurses Society
- Society of Thoracic Surgeons

The specialties included pulmonary/respiratory medicine, critical care, medical oncology, thoracic surgery, radiation oncology, epidemiology, law, and medical ethics.

SOURCE(S) OF FUNDING

Funding for both the evidence reviews and guideline development was provided through an unrestricted educational grant from Bristol-Myers Squibb, which had no other role in the evidence review or guideline development process or content.

GUIDELINE COMMITTEE

American College of Chest Physicians (ACCP) Expert Panel on Lung Cancer Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Frank C. Detterbeck, MD, FCCP; Malcolm M. DeCamp, Jr., MD, FCCP; Leslie J. Kohman, MD, FCCP; Gerard A. Silvestri, MD, FCCP

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Information about potential conflicts of interest were collected from each member of the expert panel or writing committee at the time of their nomination in accordance with the policy of the American College of Chest Physicians (ACCP). Information on conflicts of interest for each panelist is listed in the guideline.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers of Chest - The Cardiopulmonary and Critical Care Journal.

Print copies: Available from the American College of Chest Physicians, Products and Registration Division, 3300 Dundee Road, Northbrook IL 60062-2348.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

Evidence Summary

- Toloza EM, Harpole L, Detterbeck F, McCrory DC. Invasive staging of non-small cell lung cancer: a review of the current evidence. Chest 2003 Jan;123(1 Suppl):157S-166S.

Background Articles

- Alberts WM. Lung cancer guidelines. Introduction. Chest 2003 Jan;123(1 Suppl):1S-2S.
- McCrory DC, Colice GL, Lewis SZ, Alberts WM, Parker S. Overview of methodology for lung cancer evidence review and guideline development. Chest 2003 Jan;123(1 Suppl):3S-6S.
- Harpole LH, Kelley MJ, Schreiber G, Toloza EM, Kolimaga J, McCrory DC. Assessment of the scope and quality of clinical practice guidelines in lung cancer. Chest 2003 Jan;123(1 Suppl):7S-20S.
- Alberg AJ, Samet JM. Epidemiology of lung cancer. Chest 2003 Jan;123(1 Suppl):21S-49S.

Electronic copies: Available to subscribers of Chest - The Cardiopulmonary and Critical Care Journal.

Print copies: Available from the American College of Chest Physicians, Products and Registration Division, 3300 Dundee Road, Northbrook IL 60062-2348.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on July 22, 2003. The information was verified by the guideline developer on August 18, 2003.

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